

Serial No. 09/551,233  
Reply to Office Action of October 8, 2004

### REMARKS/ARGUMENTS

Claims 12 and 15-19 are pending in the application. Claim 12 is allowed, claim 15 has been amended, and claims 18 and 19 are cancelled, without prejudice.

Reconsideration and withdrawal of these rejections are respectfully requested in view of the following remarks.

A. Objection to and Rejection of Claim 15 Addressed.

Claim 15 stands objected to and also stands rejected under 35 USC § 112, first paragraph. The rejection of claim 15 is fully addressed by restoring the previous acceptable claim language in claim 15.

B. Obviousness Rejection of Claim 15-19 over *Cuchiari, Izuha et al* and *Chu* Addressed.

Claims 15-19 stand rejected under 35 U.S.C. § 103(a) over *Cuchiari* in view of *Izuha et al* and *Chu*.

The rejection of claim 15, as amended, is respectfully traversed.

Claim 15 has been amended to recite a further limitation that "a grain boundary of said crystal grains of said PZT film is staggered with respect to a grain boundary of crystal grains in said lower electrode". Support for this new limitation to claim 15 is found, inter alia, in FIG. 7B of the patent application, and the supporting specification text at page 12, lines 16-18 and at page 19, lines 9-32. No new matter has been introduced into claim 15.

As can be seen in FIG. 7B of the present application, the growth of the columnar PZT crystal grains starts from the "triple point" of the crystal grains of the platinum constituting the underlying electrode. In other words, the crystal grain boundary of the PZT crystal grains are "staggered" with respect to the crystal grain boundary of the platinum grains in the bottom electrode.

In contrast, in *Izuha et al* the crystal grain boundary of the PZT crystal grains appears to be perfectly aligned with the crystal grain boundary of the bottom

Serial No. 09/551,233

Reply to Office Action of October 8, 2004

electrode. This can be clearly seen in FIG. 4A of *Izuha et al*, and is also explained at column 6, lines 6-14 of *Izuha et al*.

Thus, in *Izuha et al*, there appears to be no teaching of a "staggered" relationship between the grain boundaries of the PZT crystal grains and the bottom electrode crystal grains as claimed in claim 15. Claim 15 is therefore deemed to be allowable as containing at least one limitation not shown or suggested in the combination of *Cuchiaro*, *Izuha et al* and *Chu*.

C. Dependent Claims.

Remaining dependent claims 16-17 contain further limitations and are believed allowable as depending from allowable base claim 15. The case is now deemed to be in condition for allowance.

D. Conclusion.

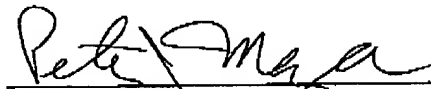
For the reasons given above, all pending claims 12 and 15-17 are now believed to be in form for allowance and such action is respectfully requested.

Should the Examiner be of the opinion that a telephone conference would expedite the prosecution of this case, the Examiner is requested to contact Applicants' attorney at the telephone number listed below.

No fee is believed due for this submittal. However, any fee deficiency associated with this submittal may be charged to Deposit Account No. 50-1123.

Respectfully submitted,

1/5, 2005

  
Peter J. Meza, No. 32,920  
Hogan & Hartson LLP  
One Tabor Center  
1200 17th Street, Suite 1500  
Denver, Colorado 80202  
(719) 448-5906 Tel  
(303) 899-7333 Fax